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10 30 MTTEPLFFKPVFKER 5.0 70 tgggggggaccgctttagctgattttggctataccattccgtcacaa WGGTALADFGYTIPSQ 110 130 cgaacaggggagtgctgggcttttgccgcgcatcaaaatggtcaaagc R T G E C W A F A A H O N G O S 150 170 gttgttcaaaacggaatgtataaggggttcacgctcagcgaattatgg V V O N G M Y K G F T L S E 230 210 gaacatcacagacatttattcggacagcttgaaggggaccgtttccct E H H R H L F G Q L E G D R F P 250 270 ctqcttacaaaaatattagatgctgaccaggacttatctgttcaggtg LLTKILDADQDLSVQ 310 90 catccqaatgatgaatatgccaacatacatgaaaacggtgagcttgga H P N D E Y A N I H E N G E L G 350 370 aaaacagaatgctggtacattattgattgccaaaaagatgccgagatt K T E C W Y I I D C Q K D A E I 410 390 atttatggccacaatgcaacaacaaggaagaactaactaccatgata IYGHNATTKEELTT 450 470 gagcgtggagaatgggatgagctcttgcgccgtgtaaaggtaaagccg E R G E W D E L L R R V K V K P 510 490 qqqqattttttctatgtgccaagcggtactgttcatgcgattggaaaa G D F F Y V P S G T V H A I G 550 570 30 ggaattcttgctttggagacgcagcagaactcagacacaacctacaga I L A L E T Q Q N S D T T Y R

### FIG.\_1A

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				590							10				
tt	ata	tga	tta	itga	ccg	aaa	aga	tgc	aga	ago	rcaa	act	aca	саа	gctt
L	Y	D	Y	D	R	K	Ď	Ā	Ē	Ğ	K	L	R	E	L
	63							650						6	70
ca	tct	gaa	aaa	gag	cat	tga	agt	gat	aga	gat	ccc	atc	tat	tcc	agaa
H	L	K	K	S	I	Ē	v	Ī	Ē	V	P	S	I	P	E
					69							710			
cg	gca	tac	agt	tca	cca	tga	aca	aat	tga	gga	ttt	act	tac	aac	gaca
R	Н	T	V	Н	Н	E	Q	I	E	D	L	L	T	T	Т
		7	30						75	0					7
tt	gat	tga	atg	cgc	tta	ctt	ttc	ggt	ggg	gaa	atq	gaa	ctt	atc	agga
Τ.	Ī	Ē	C	Ā	Ā	F	S	V	G	K	W	N	L	S	G
70															
							90						81		
	agc	aag	ctt	aaa	gca	gca	aaa	acc	att	cct	tct	tat			gatt
	agc A	aag S	ctt L	aaa K	gca Q	gca	aaa	acc. P	att F	cct L	tct L	tat: I			gatt I
tc S	A	S	L	830	Q	gca Q	aaa K	P	F	L 8	L 50	I	cag S	tgt V	I
tc S	A	S	L	830	Q	gca Q	aaa K	P	F	L 8	L 50	I	cag S	tgt V	I
tc S	A	S gga	aaa L	К 830 ccg!	Q tat	gca Q gat	aaa K ctc	P tgg:	F tga	L 8 gta	L 50	I	cag S	tgt V	I
tc S gaa E	A agg G 87	S ggag E 0	G ggg	K 830 ccg! R	Q tat; M	gca Q gato I	aaa K ctc S	P tgg G 890	F tgag E	L 8 gta Y	L 50 tgt: V	I cta Y	cag S tect	tgt V ttt F	I caaa K
tc S gaa E	A agg G 87	S ggag E 0	G ggg	K 830 ccg! R	Q tat; M	gca Q gato I	aaa K ctc S	P tgg G 890	F tgag E	L 8 gta Y	L 50 tgt: V	I cta Y	cag S tect	tgt V ttt F	I caaa K
tc S gaa E	A agg G 87	S ggag E 0 agag	L ggg G	K 830 ccgt R tate	Q tate M	gca Q gate I	aaa K ctc S	P tgg G 890 tta	F tgag E	E 8 gta Y	L 50 tgt: V	I ctar Y	cag S tect	tgt V ttt F	I caaa K
tc S ga E	A agg G 87	S ggag E 0 agag	L ggg G	K 830 ccgt R tate	Q tate M	gca Q gate I gcte	aaa K ctc S	P tgg G 890 tta	F tgag E	E 8 gta Y	L 50 tgt: V	I ctar Y	cag S tect P	tgt V ttt F 9:	I caaa K 10 actc
ga E aaa K	aggg G 87 agga G	ggag E 0 agag	L ggg G tca	K 830 ccgt R tate	Q tate M gtte L 930	gca Q gato I gcto	aaa K ctc S gcc	P tgg <sup>,</sup> G 890 ttac Y	F E E Cgg	E gta Y tct	L 50 tgt: V tgg:	I ctar Y	cag S tect P	tgt V ttt F 9:	I caaa K 10 actc

## FIG.\_1B

		FIG2
	кнтинн	230
ISSFYPVKN	ETQQNSDTTYRLYDYDRKDAEGKLRELHLKKSIE VIEVPSIPERHTVHH	220
SNSYGVCGLYI	KLRELHLKKSI	210
LIKNSWGTGWGENGYIRIKRGTGNSYGVCGLYTSSFYFVKN	YDYDRKDAEGK	200
KNSWGTGWGEI	QQNSDTTYRL'	190
AVGYGPNYILI	AIGKGILALET(	180
papa_carpa.p	YJDE	Ži Ži

340

330

320

300

140

YIIDCQKDAEIIYGHNATTKEELTTMIERGEWDELLRRVKVKPGDFFYVPSGT--

YJDE

9 papa\_carpa.p VLNDGDVNIPEYVDWRQKGAVTPVKNQGSc|GSCWAFSAV|VTIEGIIKIRTGNLNEYSE Papa\_carpa.p LLDCDRRSYGCNGG--YPWSALQLVAQYGIHYRNTYPYEGVQRYCRSREKGPYAAKTD LWEHHRHLFGQLEGDRFPLLTKILDADQDLSVQ-VHPND---EYANIHENGELG-KTE PLFFKPVFKERIWGGTALADFGYTIPSQRTGECWAFAAHQNGQSVVQ--NGMYKGFTL papa\_carpa.p RQVQPYNEGALLY---SIANQPVSVVLEAAGKDFQLYR-----GGIFVGPCGNKVDHA 50 280 220 40 270 90 210 30 260 200 20 70 10 YJDE YJDE

		10	20	30	40	50	
59 yjde.pep	MTTEPL	FFKPVFKER	IWGGTALAD-	-FGYTIPSQR1	GECWAFAAH	TTEPLFFKPVFKERIWGGTALAD-FGYTIPSQRTGECWAFAAHQNGQSVVQNGMYKG	
<b>[</b> ]	<del></del> 	:- - -			::		
- PMI	MTQSPI	FLTPVFKEK	IWGGTALRDF	REGYSIPSEST	rGECWAISAH!	MTQSPIFLTPVFKEKIWGGTALRDRFGYSIPSESTGECWAISAHPKGPSTVANGPYKG	4.0
KT 60		10	20	30	40	50	
	09	70	80	06	100	110	
19 yjde.pep	LSELWE	ННКИГЕСОГ	EGDRFPLLT	<pre><!--rul-->! </pre>	/QVHPNDE.YAI	SELWEHHRHLFGQLEGDRFPLLTKILDADQDLSVQVHPNDEYANIHENGELGKTECW	<b>53</b> -
I	=	: :: ::		- -: -:	<del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del> ::		
 PMI	LIELWE	SEHREVFGGV	EGDRFPLLT	KLLDVKEDTS	IKVHPDDYYA	IELWEEHREVFGGVEGDRFPLLTKLLDVKEDTSIKVHPDDYYAGENEEGELGKTECW	<b>'&gt;</b> -
IX		70	80	06	100	110	<b>←</b> 1
20							
	120	130	140	150	160	170 11	_
79 yjde.pep	IDCQKI	† SAEIIYGHN⊅	TTKEELTTM	IERGEWDELL	RRVKVKPGDF	▼▼ DCQKDAEIIYGHNATTKEELTTMIERGEWDELLRRVKVKPGDFFYVPSGTVHAIGKG	<i>(</i> D
IL	=======================================		= ::	<u>:</u>			
- PMI	IDCKEN	NAEIIYGHTA	RSKTELVTM:	INSGDWEGLL	RRIKIKPGDF	DCKENAEIIYGHTARSKTELVTMINSGDWEGLLRRIKIKPGDFYYVPSGTLHALCKG	r.n
AL		130	140	150	160	170	<b>~</b>
80			FIG	78 5			

1

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	180	190	200	210	220	230	2
39 vide.pep	ALETQ	<b>↓↓</b> QNSDTTYRL}	♦♦ ALETQQNSDTTYRLYDYDRKDAEGKLRELHLKKSIEVIEVPSIPERHTVHHEQIEDLL	(LRELHLKKSI	EVIEVPSIPI	евнтуннеоі	EDLL
	:         VLETQ	:  :   	:	PRELHFAKAV	::    : NAATVPHVD	l: GYIDESTESR	: : KGIT
IK		<b>↑</b> 190	200	210	220	230	2
40				C C	780	290	2
	240	250	760	017	1 ) )	!	
99 yjde.pep	TLIEC	CAYFSVGKWN	TLIECAYFSVGKWNLSGSASLKQQKPFLLISVIEGEGRMISGEYVYPFKKGDHMLLPY	KPFLLISVIEC	SEGRMISGEY	VYPFKKGDH <sup>N</sup>	ILLPY
GL	·· ··	::	:	:::::::::::::::::::::::::::::::::::::::			<del>-</del>
: LWd	TFVQC	3EYFSVYKWD	TFVQGEYFSVYKWDINGEAEMAQDESFLICSVIEGSGLLKYECKTCPLKKGDHFILPA	ESFLICSVIE	GSGLLKYEDK	TCPLKKGDH	FILPA
WÖ		250	260	270	280	290	М
00							
yjde.pep	300 GEFK]	31( 'AE	ТН				
PMI	: l PDFT	:  ::      : PDFTIKGTCTLIVSHI	-:   HI				
		010					

FIG.\_3B

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	YKG	_	LAG		Н	ECW	=	ECW		<del>,</del> 1	IGKG	=	LCKG	
50	NGQSVVQNGM	= :: :: ::	HGSSSVKNGP	50	110	ITHENGELGKT		(LHENGDLGKI	110	170	YVPSGTVHA]		FYVPSGTLHAI <b>A</b> ♠	170
<b>4</b> C	GEСWAFAAHO	<del>-</del>	GECWAVSAHA ▲	40	100	⁄QVHPNDEYAN	: : : : : : : : : : : : : : : : : : : :	7QVHPDDDDYAK	100	160	RVKVKPGDFE		RIKIKPGDF	160
30	MTTEPLFFKPVFKERIWGGTALAD-FGYTIPSQRTGECWAFAAHQNGQSVVQNGMYKG		MTHPLFLEPVFKERLWGGTKLRDAFGYAIPSQKTGECWAVSAHAHGSSSVKNGPLAG ▲	30	06	LSELWEHHRHLFGQLEGDRFPLLTKILDADQDLSVQVHPNDEYANIHENGELGKTECW		DQVWKDHPEIFGFPDGKVFPLLVKLLDANMDLSVQVHPDDDYAKLHENGDLGKTECW	06	150	DCQKDAEIIYGHNATTKEELTTMIERGEWDELLRRVKVKPGDFFYVPSGTVHAIGKG		IDCKDDAELILGHHASTKEEFKQRIESGDWNGLLRRIKIK?GDFFYVPSGTLHALCKG ▲▲	150
20	IWGGTALAD		LWGGTKLRD	20	80	EGDRFPLLT	: = = -	DGKVFPLLV	80	140	ATTKEELTTM		ASTKEEFKQR	140
10	JFFKPVFKER	= = = = = = = = = = = = = = = = = = = =	LFLEPVFKER	10	7.0	EHHRHI.FGQI	_	KDHPEIFGFE	70	130	DAEIIYGHNA		DAELILGHHA	130
	MTTEPI	-	MTHPI		09	LSELW	<u>::</u> ::	LDQVWI	09	120	IDCOK	:: = -	IDCKD	120
	59 yjde.pep	FT	 YDHS	KT		19 yjde.pep	YI	 YDHS	ΥΙ		79 yjde.pep	IL	 YDHS	T L

# FIG.\_4A

7	1	4	4

	180	190	200	210	220	230	7
yjde.pep	ALET	ALETQQNSDTTYRLYDYDRKDAEGKLRELHLKKSIEVIEVPSIPERHTVHHEQIEDLL	DYDRKDAEGK	(LRELHLKKS)	EVIEVPSI	рекнтиннеоі	EDLL
YDHS	:   VLEI	:	: : :  DYDRCNDQGG	:: :: jkrtlhiekan	AEVITIPHII	:    : ::: OKVHTPEVKEV	: Gnae
	180	11,90	200	210	220	230	
	240	250	260	270	283	290	2
yjde.pep	TLIE	TLIECAYFSVGKWNLSGSASLKQQKPFLLISVIEGEGRMISGEYVYPFKKGDHMLLPY	SGSASLKQQK	(PFLLISVIEC	SEGRMISGEN	KVYPFKKGDHM	LLPY
			·· ·· 	- - -	·· 	::	_
: YDHS	ΔΛΧΛ	VYVQSDYFSVYKWKISGRAAFPSYQTYLLGSVLSGSGRIINNGIQYECNAGSHFILPA	SGRAAFPSYÇ	TYLLGSVLSC	SSGRIINNG	IQYECNAGSHF	ILPA
	240	250	260	270	280	290	
yjde.pep YDHS	300 GEFK     GEFT	0 GEFKLEGYAECIVSHL     :     ::   GEFTIEGTCEFMISHP	I G				

# FIG.\_4B

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30 10 MTHPLFLEPVFKERLW 5.0 70 ggagggacgaagcttcgtgacgcttttggctacgcaataccctcacaa G G T K L R D A F G Y A I P S Q 110 aaaacaggtgagtgctgggccgtttctgcacatgcccatggctcgtcg K T G E C W A V S A H A H G S S 150 170 tctgtaaaaaatggcccgctggcaggaaagacacttgatcaagtatgg S V K N G P L A G K T L D Q V W 230 210 aaagatcatccagagatattcgggtttccggatggtaaggtgtttccg K D H P E I F G F P D G K V F P 250 270 ctgctggtaaagctgctggacgccaatatggatctctccgtgcaagtc LLVKLLDANMDLSVQV 310 catcctgatgatgattatgcaaaactgcacgaaaatggcgaccttggt H P D D D Y A K L H E N G D L G 350 aaaacggagtgctggtatatcattgattgcaaagatgacgccgaacta K T E C W Y I I D C K D D A E L 410 attttgggacatcatgcaagcacaaaggaagagttcaaacaacgaata ILGHHASTKEEFKQRI 470 450 gaaagcggtgattggaacgggctgctgaggcgaatcaaaatcaagcca E S G D W N G L L R R I K I K P 510 490 ggagatttcttttatgtgccaagcggtacactccatgctttatgtaag G D F F Y V P S G T L H A L C K 30 550 ggaacccttqtccttqaaatccagcaaaactctgatacaacatatcgc G T L V L E I Q Q N S D T T Y R

### FIG.\_5A

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610 590 gtatacgattatgaccgctgtaatgaccagggccaaaaaagaactctt V Y D Y D R C N D Q G Q K R T L 650 catatagaaaaagccatggaagtcataacgataccgcatatcgataaa HIEKAMEVITIPHIDK 710 690 gtgcatacaccggaagtaaaagaagttggtaacgctgagatcattgtt V H T P E V K E V G N A E I I V 750 730 tatgtgcaatcagattatttctcagtgtacaaatggaagattagcggc Y V Q S D Y F S V Y K W K I S G 790 810 70 cgagctgcttttccttcatatcaaacctatttgctggggagtgttctg RAAFPSYQTYLLGSVL 850 830 agcggatcaggacgaatcataaataatggtattcagtatgaatgcaat S G S G R I I N N G I Q Y E C N 890 870 gcaggctcacactttattctgcctgcgcattttggagaatttacaata A G S H F I L P A H F G E F T I 930 gaaggaacatgtgaattcatgatatctcatcct E G T C E F M I S H P

FIG.\_5B

#### 10/11

30 10 atgacgcaatcaccgatttttctaacgcctgtgtttaaagaaaaatc MTQSPIFLTPVFKEKI 70 50 tggggcggaaccgctttacgagatagatttggatacagtattccttca WGGTALRDRFGYSIPS 130 110 gaatcaacgggggaatgctgggccatttccgctcatccaaaaggaccg E S T G E C W A I S A H P K G P 170 150 agcactgttgcaaatggcccgtataaaggaaagacattgatcgagctt S T V A N G P Y K G K T L I E 230 210 tgggaagagcaccgtgaagtattcggcggcgtagagggggatcggttt WEEHREVFGGVEGDRF 270 250 ccgcttctgacaaagctgctggatgtgaaggaagatacgtcaattaaa P L L T K L L D V K E D T S I K 310 90 gttcaccctgatgattactatgccggagaaaacgaagagggagaactc V H P D D Y Y A G E N E E G E L 370 350 ggcaagacggaatgctggtacattatcgactgtaaggaaaacgcagaa G K T E C W Y I I D C K E N A E 410 atcatttacgggcatacggcccgctcaaaaaccgaacttgtcacaatg I I Y G H T A R S K T E L V T M 470 450 atcaacagcggtgactgggagggcctgctgcgaagaatcaaaattaaa INSGDWEGLLRRIKIK 510 490 ccgggtgatttctattatgtgccgagcggaacgctgcacgcattgtgc P G D F Y Y V P S G T L H A L C 550 aagggggcccttgttttagagactcagcaaaattcagatgccacatac K G A L V L E T Q Q N S D A T Y

### FIG.\_6A

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610 590 cgggtgtacgattatgaccgtcttgatagcaacggaagtccgagagag R V Y D Y D R L D S N G S P R E 650 630 cttcattttgccaaagcggtcaatgccgccacggttccccatgtggac LHFAKAVNAATVPHVD 710 690 gggtatatagatgaatcgacagaatcaagaaaaggaataaccattaaa Ğ Y I D E S T E S R K G I T I K 750 730 acatttgtccaaggggaatatttttcggtttataaatgggacatcaat T F V Q G E Y F S V Y K W D I N 810 790 70 ggcgaagctgaaatggctcaggatgaatcctttctgatttgcagcgtg G E A E M A Q D E S F L I C S V 850 830 atagaaggaagcggtttgctcaagtatgaggacaaaacatgtccgctc I E G S G L L K Y E D K T C P L 890 870 aaaaaaggtgatcactttattttgccggctcaaatgcccgattttacg K K G D H F I L P A Q M P D F T 930 ataaaaggaacttgtacccttatcgtgtctcatatt I K G T C T L I V S H I

FIG.\_6B